

CLAIM AMENDMENTS

1. (Currently Amended) A method for manufacturing a thin-film semiconductor, comprising the step of polycrystallization to focus visible light pulse laser ~~(22)~~ into a line shape on a surface of an object to be irradiated, and repeat irradiation with displacing said visible light pulse laser ~~(22)~~ such that a line-shaped irradiated region ~~(35)~~ is overlapped with a region ~~(35)~~ irradiated at a next timing in a width direction of the line-shaped irradiated region, to form a polycrystalline silicon film on the surface of said object,

wherein said step of polycrystallization applies ultraviolet light pulse laser ~~(23)~~ onto a second irradiated region ~~(36)~~ partially overlapping said first irradiated region ~~(35)~~ while or before said visible light pulse laser ~~(22)~~ is applied to said first irradiated region ~~(35)~~.

2. (Currently Amended) The method according to claim 1, wherein said visible light pulse laser ~~(22)~~ and said ultraviolet light pulse laser ~~(23)~~ are applied such that, while said object is relatively moved in one direction ~~(71)~~, said second irradiated region ~~(36)~~ is located more rearward in the direction in which said object moves than said first irradiated region ~~(35)~~.

3. (Currently Amended) The method according to claim 1, wherein a second harmonic of Nd:YAG is used as said visible light pulse laser ~~(22)~~, and a harmonic having a shorter wavelength than that of the second harmonic of Nd:YAG is used as said ultraviolet light pulse laser ~~(23)~~.

4. (Currently Amended) An apparatus for manufacturing a thin-film semiconductor, comprising:

visible light pulse laser irradiation means to focus visible light pulse laser ~~(22)~~ into a line shape on a surface of an object to be irradiated, and repeat irradiation with displacing said visible light pulse laser ~~(22)~~ such that a line-shaped irradiated region ~~(35)~~ is overlapped with a region ~~(35)~~ irradiated at a next timing in a width direction of the line-shaped irradiated region, to form a polycrystalline silicon film on the surface of said object; and

ultraviolet light pulse laser irradiation means to apply ultraviolet light pulse laser ~~(23)~~ onto a second irradiated region ~~(36)~~ partially overlapping said first irradiated region ~~(35)~~ while or before said visible light pulse laser ~~(22)~~ is applied to said first irradiated region ~~(35)~~.

5. (Currently Amended) The apparatus according to claim 4, comprising:
object moving means to relatively move said object in one direction~~(71)~~; and
irradiated region differentiating means to set said second irradiated region~~(36)~~ to be
located more rearward in the direction in which said object moves than said first irradiated
region~~(35)~~.

6. (Currently Amended) The apparatus according to claim 4, capable of applying a
second harmonic of Nd:YAG as said visible light pulse laser~~(22)~~ and a harmonic having a
shorter wavelength than that of the second harmonic of Nd:YAG as said ultraviolet light
pulse laser~~(23)~~.

7. (Currently Amended) The apparatus according to claim 4, comprising:
a laser transmitting portion~~(10, 12, 13, 8)~~ transmitting said visible light pulse laser
and said ultraviolet light pulse laser to allow said visible light pulse laser~~(2)~~ and said
ultraviolet light pulse laser~~(3)~~ to travel on an identical optical axis; and
prisms~~(80)~~ arranged in a symmetrical positional relation each other across said optical axis to
differentiate emitting angles of said visible light pulse laser and said ultraviolet light pulse
laser in said laser transmitting portion.

8. (New) A method of forming a polycrystalline silicon film from an amorphous
silicon film, the method comprising:
irradiating a first area of an amorphous silicon film with pulsed visible laser light
focused into a line shape on the amorphous silicon film by moving the visible laser light
relative to the amorphous silicon film;
no later than irradiating the first area with the visible laser light, irradiating a second
area of the amorphous silicon film, partially overlapping the first area, with pulsed ultraviolet
laser light; and
subsequently irradiating a third area of the amorphous silicon film with the pulsed
visible laser light, wherein the first area is partially overlapped by the third area.

9. (New) The method according to claim 8 including producing the pulsed visible
laser light and the pulsed ultraviolet light using a single laser and generating harmonics of the
light produced by the laser as the pulsed visible light and the pulsed ultraviolet light.

In re Appln. of INOUE et al.
Application No. Unassigned

10. (New) The method according to claim 8 wherein the pulsed visible laser light irradiates a location on the amorphous silicon film before the location is irradiated by the pulsed ultraviolet laser light, as the pulsed visible laser light and the pulsed ultraviolet laser light move relative to the amorphous silicon film.